

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 December 2004 (23.12.2004)

PCT

(10) International Publication Number
WO 2004/110435 A1

(51) International Patent Classification⁷: **A61K 31/4025**,
C07D 409/12, 409/14, 413/14, A61P 7/02

(21) International Application Number:
PCT/EP2004/006592

(22) International Filing Date: 17 June 2004 (17.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0314299.9 19 June 2003 (19.06.2003) GB

(71) Applicant (for all designated States except US): **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford Middlesex UB6 0NN (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BORTHWICK**,

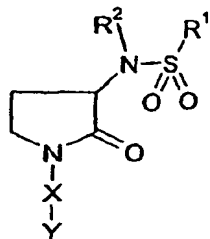
Alan, David [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). CHAN, Chuen [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). KELLY, Henry, Anderson [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). KLEANTHOUS, Savvas [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). MASON, Andrew, McMurtrie [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). WATSON, Nigel, Stephen [GB/GB]; GlaxoSmithKline, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB).

(74) Agent: **BAKER, Suzanne, Jane**; GlaxoSmithKline, Corporate Intellectual Property (CN925.1), 980 Great West Road, Brentford Middlesex TW8 9GS (GB).

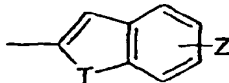
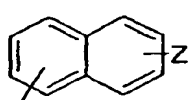
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

[Continued on next page]

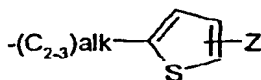
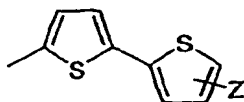
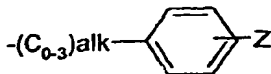
(54) Title: 1-PHENYL-2-OXO-3-SULFONYLAMINO-PYRROLIDINE DERIVATIVES AND RELATED COMPOUNDS AS FACTOR XA INHIBITORS FOR THE TREATMENT OF ACUTE VASCULAR DISEASES



(I)



(II)



(57) Abstract: The invention relates to compounds of formula (I) wherein: R¹ represents a group selected from: formula (II) each ring of which optionally contains a further heteroatom N, Z represents an optional substituent halogen, alk represents alkylene or alkenylene, T represents S, O or NH; R² represents -C₁₋₆alkyl, -C₁₋₃alkylCN, -C₀₋₃alkylR^c, -C₁₋₃alkylR^f, -C₂₋₃alkylNR^aR^b, -C₂₋₃alkylOC₁₋₆alkyl, -C₂₋₃alkylOC₁₋₃alkylCONR^aR^b, with the proviso that R² does not represent C₂₋₃alkylmorpholino; X represents phenyl or a 5- or 6- membered aromatic heterocyclic group containing at least one heteroatom selected from O, N or S, each of which is optionally substituted by 0-2 groups selected from: halogen, -C₁₋₄alkyl, -C₂₋₄alkenyl, -CN, -CF₃, -NR^aR^b, -C₀₋₄alkylOR^c, -C(O)R^d and -C(O)NR^aR^b; Y represents a substituent selected from hydrogen, halogen, -C₁₋₄alkyl, -C₂₋₄alkenyl, -NR^aR^b, -NO₂, -C(O)NR^aR^b, -N(C₁₋₄alkyl)(CHO), -NHCOC₁₋₄alkyl, -NHSO₂R^d, -C₀₋₄alkylOR^c, -C(O)R^d, -S(O)_nR^d, or -S(O)₂NR^aR^b; The other substituents are as defined in claim 1.

WO 2004/110435 A1